



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,546	12/10/2004	Wayne Francis Callen	23003-0001	5667

26587 7590 05/19/2006

MCNEES, WALLACE & NURICK LLC
100 PINE STREET
P.O. BOX 1166
HARRISBURG, PA 17108-1166

EXAMINER

AMRANY, ADI

ART UNIT PAPER NUMBER

2836

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/517,546		CALLEN ET AL.	
	Examiner		Art Unit	
	Adi Amrany		2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/14/05, 6/27/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 6/27/05 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. The informal drawings are not of sufficient quality. Figures 3-5, 7, 9-12 are hand drawn. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Art Unit: 2836

3. Figure 9 is objected to because closed reset button 117 (page 24, line 16) is not labeled. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:
- a. Page 15, lines 14-15, the phrase "connected to conductor 11 via conductor 11" is unclear. It appears that the second instance of conductor 11 was inadvertently inserted.

Art Unit: 2836

- b. Page 15, line 17, it appears that "notional" was inserted instead of "nominal."
- c. Page 15, lines 19-25, it is unclear to what "this particular relay" refers.
- d. Page 16, lines 17-18, the manufacturer and model designation are not present.
- e. Page 16, line 27, the 6 after coil should read 44.
- f. Page 16, line 33, please insert 52 after "capacitor."
- g. Page 21, line 26, the phrase "exposed to a phase to neutral voltage" is unclear.
- h. Page 23, line 11, it appears that "is" was inserted instead of "in."
- i. Page 24, line 7, it appears that "relay to relay 19" should read "relay 19."
- j. Page 27, line 19, should read "Figure 12."
- k. Page 29, lines 25-27, the claim of priority to an earlier application should be placed at the beginning of the specification. See 37 CFR 1.77(b).

Appropriate correction is required.

Claim Objections

5. Claim 28 is objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The use of "about" renders the claim indefinite.

The limitation that the coil is energized at "about 1 volt DC" is indefinite. The sensor relay includes a 5-volt DC coil, which is actually energized at 3 volts, or 40% of

Art Unit: 2836

its rated value (page 15, lines 4-5 and 18-19). The coil is also disclosed to operate at voltages of up at 240 volts AC. Further, no specific make or model of relay is disclosed (page 15, line 19). This creates a significant range of operation for the coil, and renders the claim indefinite for the use of the term "about."

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 19-23 and 25-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Bagalini (EP 0,651,488 A1).

With respect to claim 19, Bagalini discloses a control circuit (figure 1; column 1, lines 1-3) including:

at least two input terminals (figure 1, item 16) for electrically connecting with a power source;

at least two output terminals (figure 1, item 18) for electrically connecting with a load;

a sensor (figure 1, item 12; column 1, lines 6-8 and 43-45) having a sensor relay that is responsive to a reference signal being within a predetermined range for providing a sensor signal;

and a switching device (figure 1, item 14; column 1, lines 9-11 and 45-48) having a switching relay that is responsive to the sensor signal for progressing between a first mode and a second mode wherein: in the first mode the input and output terminals are respectively electrically connected for allowing the load to receive power from the source via the switching relay; and in the second mode the input and output terminals are electrically disconnected for preventing the source from supplying power to the load via the switching relay (column 2, lines 9-11).

With respect to claim 20, Bagalini discloses the circuit according to claim 19, and further discloses the sensor relay is a low voltage DC relay (figure 1, items 22-26; column 1, line 57 to column 2, line 1). The detection unit 26 is capable of detecting an earth leakage fault. The sensor relay (item 19) is energized at 5 volts DC, but is disclosed to be capable of handling 240 volts AC (page 15, lines 14-25).

With respect to claim 21, Bagalini discloses the circuit according to claim 20, and further discloses the switching relay is a mains voltage relay (figure 1, item 14). The latch device disclosed in Bagalini is connected directly to the power source (mains voltage).

With respect to claim 22, Bagalini discloses the circuit according to claim 20, and further discloses the switching relay is a DC voltage relay (column 1, lines 9-11). The latch device disclosed by Bagalini anticipates the DC voltage relay recited in claim 22. The switching relay (item 22) of the present application is rated for the voltage provided by the power source (page 16, lines 16-17). Further, the coil (item 44) of relay 22 is

Art Unit: 2836

capable of handling 220/240 volts AC. It would be obvious to a person skilled in the art to use a DC voltage relay in the instances where the power source is a DC voltage.

With respect to claim 23, Bagalini discloses the circuit according to claim 19, and further discloses the sensor signal is an AC signal or derived from an AC signal (column 1, lines 6-8). Bagalini discloses that the detecting means sends an output signal to trigger the latch device. The output signal can be any signal capable of causing the latch device to switch between open/closed states, including AC signals.

The sensor relay of the present application and the detecting means of Bagalini are both passive devices. These devices, therefore, cannot generate their own sensor signal. The sensor relay and detecting means must generate the sensor signal from the AC power source. It is inherent that the sensor signal would be an AC or DC signal that is derived from the AC power source.

With respect to claim 25, Bagalini discloses a control circuit (figure 1; column 1, lines 1-3) including:

- at least two input terminals (figure 1, item 16) for electrically connecting with a power source;

- at least two output terminals (figure 1, item 18) for electrically connecting with a load;

- a switching relay (figure 1, item 14; column 1, lines 9-11 and 45-48) having a switching coil that is selectively energized to progress the relay between two modes wherein: in one of the modes the input and output terminals are respectively electrically connected for allowing the load to receive power from the

Art Unit: 2836

source via the switching relay; and in the other mode the input and output terminals are electrically disconnected for preventing the source from supplying power to the load via the switching relay (column 2, lines 9-11);

and a sensor relay (figure 1, item 12; column 1, lines 6-8 and 43-45) that is responsive to a predetermined condition for energizing the coil of the switching relay.

With respect to claim 26, Bagalini discloses the control circuit according to claim 25, and further discloses the sensor relay has a low voltage coil that is energized in response to the fault condition (column 1, lines 6-8). The detecting means disclosed in Bagalini includes a relay and energizing coil.

With respect to claim 27, Bagalini discloses the control circuit according to claim 26, and further discloses the low voltage coil is energized by a DC voltage. The low voltage coil is anticipated by the Bagalini detecting means, as discussed above. Further, the coil of the sensor relay is disclosed in the present application to operate and respond to voltages up to 240v AC (page 15, lines 14-25).

With respect to claim 28, Bagalini discloses the control circuit according to claim 27, and further discloses the low voltage coil is energized by a DC voltage of about 1 volt.

Claim 24 is rejected under 35 U.S.C. 102(b) as being anticipated by Muelleman (US 5,448,443).

Art Unit: 2836

Muelleman discloses a wiring system (figure 1) for carrying a mains supply from a mains source having at least two mains conductors (figure 1, items L and N; column 3, lines 54-58), the system being installed at a site and including:

a transformer (figure 1, item T1; column 3, lines 49-53) located at or near the site and having one or more primary windings for connecting to the mains conductors and one or more secondary windings to provide a site voltage that is substantially equal to the mains supply (1:1 winding ration, column 3, line 54);

at least two site conductors (figure 1, items L' and N'; column 3, lines 63-66) that are installed at the site for electrically connecting with the one or more secondary windings for distributing the site voltage to predetermined locations about the site;

and a floating conductor (figure 1, item SG; column 3, line 66 to column 4, line 2) that is associated with a load installed at the site for providing a reference voltage with respect to one or more of the site conductors (column 4, lines 1-2).

Conclusion

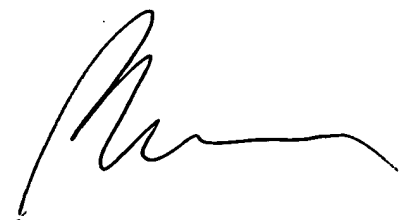
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 5,600,524 and 6,433,978 to Neiger disclose ground fault circuit interrupters that use conductors to transmit reference voltages and comprise transformers at the AC input.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adi Amrany whose telephone number is (571) 272-0415. The examiner can normally be reached on weekdays, from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AA



PHUONG T. VU
PRIMARY EXAMINER